

# **SCIENCE PROCESS SKILLS**

## **TARGETED NH FRAMEWORKS FOR SCIENCE LITERACY**

S:SPS1:6:2.1 Design and record a simple step-by-step procedure to follow in order to carry out a fair test of a scientific question.

S:SPS1:6:3.3 Follow the teacher's instructions in performing experiments, following all appropriate safety rules and procedures.

S:SPS1:6:1.9 Determine which observations will be helpful to a given investigation.

S:SPS1:6:4.1 Use appropriate tools to organize, represent, analyze and explain data.

S:SPS2:6:1.2 Describe how results of similar and repeated investigations may vary and suggest possible explanations for variations.

## **CHILD-FRIENDLY ESSENTIAL STANDARD(S)**

*I know which observations I should make during an experiment and I can ask questions about how the observations are similar or different.*

*I can design an experiment using the proper lab steps to explore a scientific question*

*I read or listen to all lab directions carefully and follow safety rules and procedures when doing investigations*

*I can use tables, charts, and graphs to organize, represent, to analyze and explain my data*

*I notice when my results are different from other test results and I can suggest possible reasons for the difference*

## **PRIOR KNOWLEDGE (Presented in previous grade levels)**

- authentic assessment in Grade 5 on equipment: 3-beam balance, graduated cylinders, measurement tools
- Students understand lab safety rules
- Students have worked extensively in cooperative groups
- Students have been introduced to the concept of variables and how they can be changed
- introduction of qualitative vs. quantitative observations
- microscope usage

- introduction to metric measurement
- introduction to volume
- introduction to scientific method
- students begin to reflect on the validity of their hypothesis and generate new questions for further investigation
- Students understand the nature of a system

### **ESSENTIAL UNDERSTANDING(S):**

Scientists use processes to investigate, communicate, and deepen their understanding of their world.

### **CONTENT/SKILLS DEVELOPED IN GRADE 6**

- 1) Students understand how using a standard lab format communicates scientific process.
- 2) Students will use tables, graphs, and charts to represent their data
- 3) Students will demonstrate a method for recording qualitative and quantitative observations
- 4) Students will be able to measure liquid and solid volume and will demonstrate the concept of volume displacement
- 5) Students will begin interpreting their observations.
- 6) Students will understand that only one variable should change at a time and if more than one variable changes, the results of the investigation could be faulty.
- 7) Students will verbalize and use equipment to show the difference between mass and weight.

### **VOCABULARY**

#### **Prior Knowledge**

Meniscus

#### **Mastered**

Qualitative/Quantitative observations

Displacement

Volume (liquid vs. solid) and (LxWxH vs. displacement)

Cubic centimeter vs. milliliter (solid vs. liquid volume)

Mass vs. weight

Inference vs. observation

Agreed Upon Lab steps (further info to follow!)

Beaker vs. graduated cylinder

Intervals on scientific equipment